that before all other cities, and above all other places, Glasgow is the city and the place for a statue of Lord Kelvin. Men like Lord Kelvin were seldom solitary voyagers, but rather leaders of a great company of thinkers and experimenters labouring to lighten the burden of suffering humanity. As a practical inventor as well as a thinker his claims appealed to all, and would continue to do so. It was therefore with pride and joy and confidence that he asked the City of Glasgow, for all time to come, to take good care of a beautiful memorial of a truly memorable man.

Principal Sir Donald MacAlister, in moving a vote of thanks to Mr. Birrell, said that the Lord Rector had performed the ceremony with his accustomed felicity, and had worthily expressed the homage of the city and University to one of its brightest ornaments. In the name of the subscribers, Prof. S. P. Thompson moved a vote of thanks to the sculptor; this was seconded by Prof. Perry, and Mr. Shannan replied.

At the luncheon following on the unveiling of the statue to Lord Kelvin the toast, "The Memory of Lord Kelvin,"was proposed by the Rt. Hon. Arthur James Balfour, M.P.

Mr. Balfour dwelt upon Lord Kelvin's happy combination of great gifts, making him at once the greatest master of theory and a leading spirit in every department of practical affairs. His services to mankind, as man of business, inventor, teacher, investigator of the great problems of the universe, in order more and more to raise the material condition of mankind, rank him as greatest of the great group of physicists who have paved the way for the scientific revolution in the midst of which we are living. Lord Kelvin's want of sympathy with those latter-day speculations to which his own labours led up was not the imperviousness to ideas which comes of mental inertia. But what he would accept from other men depended at the moment upon the intense inner life that he led, which concentrated his attention upon certain lines of investigation, and made him almost oblivious of what was going on outside the current of his own thought. Great in knowledge, great in achievement, yet in himself the most modest, the most eager, the most childlike—in the good sense of the word—of men, his record had never been surpassed in the whole annals of physical science.

THE PREHISTORIC SOCIETY OF EAST ANGLIA.

THE members of the Prehistoric Society of East Anglia are to be congratulated on the systematic manner in which they are studying the properties of flint, with special reference to the identification of human workmanship. In the latest part of their proceedings[1] Dr. W. Allen Sturge discussess the patina of flint implements, and concludes that it is produced entirely by exposure on the surface. Permanent burial appears not only to retard, but even to prevent, patination. Mr. J. Reid Moir describes some experiments on the chipping of flints, and attempts to show that the flaking of a margin by natural causes is comparatively irregular, while the blows directed by man to produce such flaking are at definite angles with much regularity. He also demonstrates that flakes produced by natural pressure often exhibit a bulb at each end. Mr. F. N. Haward follows with additional notes on the chipping of flints by natural agencies, and concludes that much can be accounted for by movements in the ground. He instances particularly the chipping due to the creeping motion of gravel at the top of pipes in the chalk.

Among descriptive papers may be pecially mentioned that by Mr. J. Reid Moir on the much-discussed human skeleton discovered by him in a glacial deposit at Ipswich. Though interesting, it is by no means convincing in its argument that the skeleton lay in undisturbed ground; and the difficulty in believing that the human being in question lived before the deposition of the boulder clay is further enhanced by the report of Prof. A. Keith, who finds that there is no essential difference between this skeleton and that of a modern civilised man.

There may also be differences of opinion about the supposed flint implements, described by Mr. W. G. Clarke, from the basement bed of the Norwich Crag, in Norfolk; but Dr. Sturge's elaborate paper on Mousterian and other late Palæolithic flint implements from superficial deposits in East Anglia will be accepted without hesitation, and is all the more welcome from the abundance of French specimens which the author is able to select for comparison from his own cabinet. All the papers are well illustrated, but this one by Dr. Sturge especially so; and the only fault we have to find with them is their frequent diffuseness. A more concise and systematic mode of expression might be adopted in future with advantage.

NOTES.

AN extra meeting of the Chemical Society will be held at Burlington House, Piccadilly, W., on Thursday, October 23, at 8.30 p.m., when the Ladenburg Memorial Lecture will be delivered by Prof. F. Stanley Kipping, F.R.S.

A LECTURE will be given under the auspices of the Swedenborg Society at the rooms of the Society of British Artists, Suffolk Street, on the evening of November 19, by Prof. W. B. Bottomley, of King's College, London, on Swedenborg's doctrine of the origin of life. Sir W. F. Barrett, F.R.S., will occupy the chair.

THE High Commissioner of the Federated Malay States has notified that, in consideration of the importance of the London School of Tropical Medicine to the Government, a sum of 5000*l.* has been voted as a contribution to Mr. Austen Chamberlain's appeal for 100,000*l.* for the endowment of the school. The grant was made by the Legislative Council on the representation of unofficial members. Mr. Chamberlain's fund now amounts to 70,000*l*.

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[1] Proceedings of the Prehistoric Society of East Anglia, 1910–11, 1911–12, vol. i., pt. ii. (London: H. K. Lewis, 1912.)

A DISCOVERY of arctic land, which, when further investigated, will add an important feature to even a small-scale map of the north polar region, is reported by *The Times* correspondent in St. Petersburg. It appears that Capt. Wilkitsky, in command of two Russian surveying ships off the north Siberian coast, has been working northward and westward from Vladivostok and Cape Dezhnev, and was brought to a stop by ice off Cape Chelyuskin. Proceeding northward in an attempt to turn the barrier, he came upon land—an eastward-facing coast—extending in a direction roughly north-north-west from 78° to 81° N., over a distance of 200 nautical miles. He was forced to return, and has sent his message from Fort St. Michael, in Alaska. The existence of land of such extent as is indicated at once suggests an interruption in the polar circulation, goes far to account for the habitually ice-bound condition of the Kara Sea to the south-west, and of the waters off Cape Chelyuskin itself (which must apparently be separated from the new land by a strait only some forty miles wide), and may be taken to bear upon the distinct northerly trend of the drift of Nansen's ship, the *Fram*, which appears in the charts between lats. 110° and 90° E. If the new land really terminates in 81° N., it may be added that the *Fram* easily missed it, being fully three degrees more northerly.

MR. TRUMAN H. ALDRICH, of Birmingham, Alabama, has presented his entire collection of recent shells, about 20,000 named species, to the museum of the Geological Survey of Alabama. The series includes not only Mr. Aldrich's gatherings and the results of exchanges during more than fifty years, but several large private accumulations which were purchased entire, notably the Pike Mauritius series, the Jones Bermuda and Nova Scotia shells, and the Parker cabinet of about 5500 listed species. The Aldrich collection is particularly rich in operculate land shells and includes many types. About 1500 books, conchological and other scientific works, accompanied the gift. Mr. Aldrich has already proved himself a generous friend of the museum. Three years ago he gave all his duplicate shells, some 250,000, fine specimens; and the very rich set of Tertiary invertebrate fossils is largely due to him. His cabinet set of these fossils, one of the finest in the world, was acquired by the Johns Hopkins University of Baltimore.

A STRIKING and impressive instance of the benefits conferred upon the human race by developments of modern science was provided by the occurrences in connection with the disastrous fire which destroyed the British steamship *Volturno* in mid-Atlantic last week during a heavy gale. The passengers and crew numbered 657, and it is known that 521 have been saved. All the survivors on board the ship when the vessels arrived which responded to the *Volturno's* wireless telegraphic call for help were saved. The Cunard liner *Carmania* received the first news of the fire, and immediately use was made of her wireless installation to send the cry for help far and wide, with the result that ten steamships were able to render aid. The 521 survivors thus owe their lives primarily to wireless telegraphy. Among the rescuing vessels was an oil-tank steamer, the *Narragansett*, which by discharging two large streams of oil, moderated the troubled waters and assisted in the work of rescue by enabling small boats to approach the burning vessel with less danger. A passenger on board the *Carmania* says, in *The Daily Mail*, that within five minutes after the commencement of the discharge of the oil, the sea for a hundred yards away from the *Narragansett* and towards the *Volturno* became absolutely calm, apart from a slight roll.

THE death is announced, in his seventy-eighth year, of a distinguished American astronomer, Rear-Admiral John R. Eastman. In his boyhood he lived on a farm in New Hampshire, and attended only a public elementary school, afterward supporting himself by teaching until he entered Dartmouth College, where he graduated in 1862. After serving for a few years as an assistant at the U.S. Naval Observatory, he was appointed in 1865 professor of mathematics in the U.S. Navy. He retired in 1898 with the rank of captain, and was promoted in 1906 to that of rear-admiral. He was engaged for many years in astronomical observation and research, the bulk of his published work appearing in the annual volumes of the Government Observatory. He prepared and edited the Second Washington Star Catalogue, containing the results of nearly 80,000 observations at the Naval Observatory. He was the author of "Transit Circle Observations of the Sun, Moon, Planets, and Comets," published in 1903. Rear-Admiral Eastman was the first president of the Washington Academy of Sciences.

THE death is announced of Sir John Batty Tuke, formerly M.P. for Edinburgh and St. Andrews Universities, at seventy-eight years of age. From an obituary notice in Tuesday's *Times* we learn that Sir John Tuke was educated at Edinburgh Academy and University. On taking the degree of M.D. he went out to New Zealand, where he was civil practitioner in medical charge of a wing of the 65th Regiment. On returning to Scotland in 1863 he began practice in Edinburgh. For some time he was assistant physician at the Royal Edinburgh Lunatic Asylum, and in 1867 was appointed medical superintendent of the Fife and Kinross District Lunatic Asylum. He returned to Edinburgh in 1873, and was associated with the late Dr. Smith and Dr. Lowe in the management of Saughton Hall Asylum, which he continued to direct until a few years ago. He was president of the Medico-Chirurgical Society and of the Neurological Society of the United Kingdom. He held the honorary degrees of D.Sc. (Dublin), LL.D. (Edinburgh), and LL.D. (St. Andrews). In 1895 Tuke was elected president of the Royal College of Physicians, Edinburgh, and in 1898, his last year of office, received the honour of knighthood. Two years later he succeeded the late Sir William Priestley as member of Parliament for Edinburgh and St. Andrews Universities. He retired from Parliament in 1910, and was succeeded by Sir Robert B. Finlay. Sir

John Batty Tuke will long be remembered as a great authority on the care and treatment of the insane. He gave himself to work hard at the problems which these cases present; and he deserved, and attained, a very high place in his profession, not only by his practice, but by his writings.

THE RIGHT HON. JAMES STUART, formerly professor of mechanism and applied mechanics in the University of Cambridge, died on Sunday, October 12, in his seventy-first year. Mr. Stuart's early education was partly private and partly at the Madras College, St. Andrews. Thence he proceeded to the University of that city, where he graduated in 1861, and in the following year he won a minor scholarship at Trinity College, Cambridge. In 1864 he was elected to a foundation scholarship at Trinity, where in 1866 he graduated as Third Wrangler. He was elected a fellow of his college in 1867. The University Extension movement sprang from Mr. Stuart's interest in the education of women. He undertook in 1867 to deliver a course of lectures on astronomy to women teachers. The result was a number of invitations to lecture to working-men. By 1871 he had worked out a scheme of extension lectures, and the University of Cambridge was induced to give definite shape to his proposals. To-day something like a thousand courses of lectures are organised annually, and more than a hundred thousand persons benefit by the teaching. In 1875 Stuart was elected the first professor of mechanism and applied mechanics at Cambridge, and was chosen a member of the University Council. During the next ten years his energies were largely devoted to the founding of the mechanical workshops in which his teaching was carried on, and to the establishment of the mechanical science tripos in the University. Prof. Stuart entered the House of Commons in 1885, and was a member of the London County Council for many years. In 1889 his absorption in party politics in London led him to resign his professorial chair at Cambridge, after a successful tenure of fourteen years. In 1909 he was sworn a member of the Privy Council; and in 1898–1901 he was rector of St. Andrews University.

MR. PERCIVAL MARSHALL is to be congratulated on the success of the fourth biennial *Model Engineer* Exhibition at the Royal Horticultural Hall. Here are collected together not only models of all kinds of professional make, together with their parts and tools suitable for their construction—good and not unduly expensive—but the work of a large band of amateur workers is exhibited also. No better evidence could be afforded of the stimulus which has been given to latent talent by *The Model Engineer*, now issued weekly, which Mr. Marshall was enterprising enough to found fifteen years ago, and also by the numerous societies and clubs which have come into existence, with this newspaper as a medium of communication. The admirable working drawings of models for which *The Model Engineer* has been so well known have had a valuable educational effect; and whether the immediate stimulus has been the desire to make a kite, a hydroplane, some kind of engine, or a wireless set, for the mere enjoyment of the thing or with the hope of obtaining one of the prizes for model work which the paper or the societies or clubs offer is a small matter, the educative process is carried out on attractive lines, and more serious study is encouraged. It is not possible in the available space to refer to individual exhibits of the amateur class, but reference may be made to the "horophone" or wireless receiving set designed for receiving the time signals from the Eiffel Tower or from Norddeich, mainly with the object of commenting on the fact that Greenwich time, now the time-basis of practically the whole civilised world, is sent out daily by Germany and France to Europe and the North Atlantic, while this country sits idly by accepting for its shipping the invaluable aid given freely by its two neighbours.

IN connection with the Fourth International Botanical Congress to be held in London in 1915, a preliminary circular has been issued on behalf of the organising committee. The previous congress, held at Brussels in May, 1910, decided, on the invitation of the Royal Society of London, that the next meeting, in 1915, should be held in London. At a general meeting of British botanists, held in London in March, 1912, an organising committee was elected, and subsequently an executive committee. A number of distinguished patrons of botany were also invited to lend their support to the congress. The organising committee consists of three presidents—Sir David Prain, Prof. F., O. Bower, and Prof. A. C. Seward—the following vice-presidents: Prof. I. Bayley Balfour, Mr. W. Bateson, Dr. F. F. Blackman, Sir Francis Darwin, Prof. H. H. Dixon, Mr. G. C. Druce, Prof. J. B. Farmer, Mr. A. D. Hall, Dr. W. B. Hemsley, Dr. R. Kidston, Prof. F. W. Oliver, Mr. R. L. Praeger, Miss E. Sargant, Dr. D. H. Scott, Mr. A. G. Tansley, Prof. S. H. Vines, and Mr. H. W. Wager; and a list of members which is fully representative of British botany. Sir Frank Crisp is treasurer, Dr. A. B. Rendle general secretary, and Dr. Otto Stapf foreign secretary. The congress will meet from May 22 to May 29, 1915, and its work will include the various branches of botanical science, together with certain matters connected with nomenclature and bibliography left over from the previous meeting. The official language of the congress will be English, but any language may be used in the discussions. Member's subscription is fifteen shillings, and ladies accompanying members may attend the meeting and excursions on payment of ten shillings each. Particulars of meetings, discussions, excursions, &c., will be issued later. As it is estimated that the sum of 1000*l.* will be required to defray the expenses of the congress, the executive committee have decided to raise a fund for the purpose, and an appeal has been issued to British botanists and those interested in the science in Great Britain.

THE Hull Municipal Museum, under its curator, Mr. T. Sheppard, continues to increase its collections. Recent additions include a fine bronze palstave lately found at Kirkella, the outfit of a Yorkshire clog-sole maker, a curious ancient wooden nut-cracker representing a human head, Saxon bronze brooches discovered at Hornsea, a fine collection of early jewellery and old firearms, while a large series of ethnographical objects from Nigeria, acquired by Mr. M. S. Cockin, has been deposited. The excellent and well-illustrated progress reports issued by the curator might with advantage be studied by other museum authorities as a means of popularising their collections.

THE most important contribution to the October issue of *Man* is a paper by Prof. Flinders Petrie describing a series of the earliest perfect tombs discovered at the great cemetery of Tarkhan, forty miles south of Cairo. Two of them date from the time of King Zet, in the middle of the first dynasty. This series of interments was found absolutely undisturbed, and contained burials of the contracted form, the head lying north, the face east, on the left side, and accompanied by some small pottery and gazelle bones. In the tomb walls are two slits, through which it was believed that the food offerings reached the dead. Some 600 skeletons have been unearthed, those of the females being homogeneous, while the males fall into two groups, indicating that from prehistoric times there had been a slow intermixture of the dynastic race with the indigenous peoples.

SINCE 1911 the Cambrian Archæological Society has been engaged on the excavation of a Roman fortress in Mid Wales—Castell Collen, "the fortress of the hazel trees," close to Llandrindrod Wells. So far, a granary, the principia or headquarters building, and the house of the commandant have been unearthed. The place, from the evidence of coins and pottery, seems to have been occupied from the end of the first century to the close of the third century A.D. Among the discoveries are a bronze scabbard-scape of late Celtic work, a dolphin-shaped scabbard attachment of bronze, a silver ring with the motto "Amor Dvlcis," and an intaglio with a Roman horseman riding down a barbarian. Much work remains to be done, and contributions are invited by Mr. C. Venables Llewelyn, Llysdinain Hall, Newbridge-on-Wye.

THE first report of the Eugenics Record Office of Cold Spring Harbour, Long Island, New York, was issued in June last by the superintendent, Mr. H. H. Laughlin. It contains an interesting account of the way in which the work of the office is organised, and of the elaborate card system which has been adopted for indexing the extensive collection of data in process of accumulation. The practical work of the office has three aims: (1) to collect and analyse family records for the purpose of studying heredity; (2) to organise courses for the training of the "field workers" to be employed in the collection of data; (3) to advise concerning the eugenical fitness of proposed marriages. For funds the office is principally indebted to Mrs. E. H. Harriman, but Mr. J. D. Rockefeller has also made generous contributions in providing for the salaries of five "field workers" and for the publication of memoirs and half the cost of the training class.

MAJOR GREIG gives an account of the present incidence of enteric or typhoid fever in India in a paper contributed to the All-India Sanitary Conference in Madras, 1912. The disease has greatly declined, as the following figures show:—Average admission per 1000 in 1895–1904, 22·3, in 1910, 4·1; constantly sick per 1000 in 1895–1904, 3·31, in 1910, 0·91; deaths per 1000 in 1895–1904, 5·62, in 1910, 0·62. The factors concerned in this decline are (*a*) segregation of the convalescent enteric patient until he is proved to be free from infection, (*b*) the elimination of the chronic carrier, (*c*) inoculation, (*d*) general sanitary improvement.

THE curator's report of the Otago University Museum for 1912 records the definite transfer to the university of the Hocken library—consisting, it may be remembered, of a valuable collection of books, pamphlets, manuscripts, plans, and pictures relating to the history of New Zealand and the Maoris. Some idea of the size of the library may be gleaned from the statement that the printed catalogue of the bound books runs to several volumes.

A DISCOVERY of special importance in connection with the problem of the homology of the mammalian auditory ossicles is recorded by Mr. R. W. Palmer, University College, Reading. In dissecting the auditory region of a fœtal Australian bandicoot (Perameles) it was found that the ossicles and cartilages lie freely in a hollow of the thin dentary bone of the lower jaw, and comparison of their position, form, and relations with the corresponding region of the skull in certain Triassic anomodont reptiles renders it practically certain that the mammalian malleus represents the articular bone of the reptilian lower jaw, while the incus of the mammal corresponds to the quadrate of the reptile and the tympanic to the angular element of the jaw. The paper is published in the *Anatomischer Anzeiger*, vol. xliii., p. 512.

WE have received from the publishers (Herren R. Friedländer und Sohn, Berlin) five parts, 34–38, of "Das Tierreich," edited by Dr. F. E. Schulze. These parts deal respectively with the butterflies of the family Amathusiidæ, the rhabdocelid turbellarian worms, the pteropod molluscs, the cæcilian amphibians, and the molluscs of the group Solenogastres; and the mere fact that the second of these (No. 35) comprises no fewer than 484 pages of text, coupled with the large number of parts already issued, gives some indication of the voluminous nature of the work. To how many parts it is expected to run we have no clue, but it may be mentioned that mammals and fishes are not touched in any of those already issued. Each part being separately paged, the entire work can be arranged in such order as may be best suited to the needs of individual students. So far as we can judge, the parts before us, which, like the rest, are by specialists in their respective subjects, maintain the high standard of their predecessors. As might have been expected in a work by different authors, the style of treatment is by no means uniform; the diagnoses of the species and groups being in some instances models of conciseness, while in others they tend to undue prolixity. The attention of "zoological recorders" may be directed to the fact that a new generic name is proposed on p. 17 of the part on Solenogastres, which may be an indication that others occur elsewhere in this invaluable work.

THE report of the Meteorological Committee for the year ended March 31 differs from its predecessors in at least one important respect, viz. the omission of most of the usual appendices. These interesting documents are to be issued subsequently. The detailed reports of the work of the several divisions of the office, based to some extent upon such appendices, appear as heretofore. We are pleased to see that H.M. the King has shown his interest in the work by commanding that a copy of the useful daily weather report be regularly addressed to him. At the request of the Treasury, the committee is negotiating with the Scottish Meteorological Society with the object, *inter alia,* of securing closer cooperation with this body in respect of the supply of meteorological information to the public. It is stated that the committee has been much interested in a proposal for the more general use of the centimetre-gramme-second system of units in meteorological publications, and, for reasons given, they have decided to use the centibar or millibar instead of the inch, as far as possible, for all barometric measurements. Specimens of the daily and weekly weather reports are given with isobars shown for centibars (100=29·52 in.), and temperatures shown on the absolute temperature scale (273° A.=32° F.). Another important change refers to the modification of the code of signals hitherto used for storm warnings. All classes of weather forecasts issued during the year 1912 were very successful; many valuable wireless reports were received from H.M. ships, and a very large number from Atlantic liners, but only about one-twentieth of the latter reached the office in time to be included in "to-day's" map in the daily weather report, although nearly half of them could be utilised in one of the two smaller maps for "yesterday" shown in that report.

ON October 3, Sir Joseph Thomson formally opened the new works of Messrs. W. G. Pye and Co. at Chesterton, near Cambridge, and in the course of his speech gave an account of his own connection with the establishment of Cambridge as an instrument-making centre. A laboratory in which any considerable amount of physical research is carried out requires an instrument maker of its own, and twenty-two years ago Sir Joseph appointed Mr. Pye to the post at the Cavendish laboratory. Under his management the laboratory workshops were greatly improved, and many exceedingly effective instruments turned out. In the meantime, a small business started by Mr. Pye developed and soon demanded his whole attention. This led to his resignation of the laboratory post eleven years ago. Since that time the business has grown so rapidly as to necessitate removal to a site admitting of further extensions in the future.

IN the *Verhandlungen* of the German Physical Society for September 15, Drs. Gehlhoff and Neumeier, of the Danzig-Langfuhr Technical School, give the results of their measurements of the thermal and electrical properties of a series of alloys of bismuth and antimony at temperatures between −190° and 100° C. The principal results relate to the thermal and electrical conductivities which were determined by a modification of the method used by Lees. They show that the quotient of the thermal by the electrical conductivity and by the absolute temperature is not a constant as it should be according to the electronic theories of conduction, by decreases by 40 to 70 per cent. as the temperature rises from −190° to 100° C. The authors point out that this behaviour is analogous to that found by Lees for steel, nickel, and several alloys, and that it confirms the belief that the conduction of heat in many metallic conductors cannot be satisfactorily explained by the motion of free electrons.

HITHERTO the laws of thermodynamics have been applied to gases, and also to investigations of the radiation pressure in a black body-cavity, but little has been done to combine gaseous pressure and radiation pressure in a single investigation. In the Bulletin of the Cracow Academy for May, Mr. T. Bialobjeski works out the conditions of equilibrium of a self-gravitating spherical mass of gas when radiation pressure is taken into account. The solution is essentially mathematical, namely, a deduction of conclusions from previously stated hypothesis; thus, to simplify matters, the author assumes the ordinary formulæ for a perfect gas and Stefan's formula for radiation pressure. The investigation has an important application to astrophysics, as it is shown that the equilibrium of the sun and stars may be affected by radiation pressure in a marked degree.

THE revised London County Council reinforced concrete regulations governing the erection of reinforced concrete buildings in the London area have been amended by the Local Government Board, and have been submitted to the professional societies for further revision. These regulations have been the subject of much criticism, and additional comment on them is made by Mr. E. S. Andrews in *The Engineer* for October 3. Mr. Andrews points out that, to render the regulations reasonable and to remove some of the absurdities which arise in their application in some instances, further amendment is required, especially in questions of working stresses and modular ratios. The clauses governing these values penalise rich mixtures of concrete in the case of all rectangular beams, and also in many cases of beams of **T** section. The decrease in modular ratio suggested by the Local Government Board is reasonable, but the working stresses in the concrete do not increase for the richer mixtures in anything like the same ratio as obtains in actual experiment. Applied to columns, the regulations as to working stresses do not lead to obviously absurd results, but they do have the effect of discouraging the use of richer mixtures.

MESSRS. GEORGE ROUTLEDGE AND SONS, LTD., have in the press, and will shortly publish, "A Handbook of Photomicrography," by H. Lloyd Hind and W. Brough Randles. The new work will contain an account of the modern methods employed in photomicrography, with a description of the apparatus and processes, treated both from a microscopic and photographic point of view.